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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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March 24, 2004

The Honorable Jessie Hill Roberson
Assistant Secretary for Environmental Management
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0113

Dear Ms. Roberson:

In March 2001, the Defense Nuclear Facilities Safety Board (Board) issued Recommendation 2001-1, *High-Level Waste Management at the Savannah River Site*. The focus of this Recommendation was on ensuring that the high-level waste (HLW) system at the Savannah River Site (SRS) would remain capable of safely supporting vital waste stabilization and disposition programs through completion. At that time, it was recognized that maintaining adequate working space in compliant waste tanks would be the primary challenge in ensuring that the HLW system would remain viable to support the site's cleanup activities.

The Department of Energy (DOE) accepted Recommendation 2001-1 and provided the Board with an Implementation Plan with several deliverables relating to the removal and disposition of salt waste. As part of its accelerated cleanup plan for SRS, DOE developed a baseline strategy for salt disposition that allowed decontamination techniques to be tailored to actual radiological characteristics. Initial estimates of levels of cesium and actinide contamination indicated that two-thirds of the salt waste originally slated for processing through the planned Salt Waste Processing Facility could be disposed of safely and more quickly on site in near-surface grout monoliths after undergoing more-modest decontamination processes in existing facilities. This tailored approach to decontamination is often referred to as the Low-Curie Salt (LCS) initiative. In a letter dated March 4, 2002, the Board cautioned DOE not to overrely on LCS given the large uncertainty associated with the initial contamination estimates, as well as regulatory issues. Continued pursuit of full-scale decontamination facilities has been, and continues to be, encouraged by the Board.

The waste characterization data obtained from sampling performed to date indicate that the cesium and actinide contamination levels in the salt waste are higher than originally estimated. Thus, a much larger fraction of salt waste than predicted may require processing through the Salt Waste Processing Facility. Further, a July 2003 federal court decision that eliminated the waste-incidental-to-reprocessing provisions of DOE Order 435.1, *Radioactive Waste Management*, has invalidated the administrative process used by DOE to establish its basis for the LCS initiative. In addition, DOE's budget request to Congress for fiscal year 2005 includes no funding for salt processing activities at SRS. These events may seriously impair the salt processing efforts at SRS.

On March 2, 2004, DOE submitted to the Board a key deliverable for Recommendation 2001-1—a programmatic risk assessment with mitigation strategies for the salt disposition program. This risk assessment identified at least seven high risks (i.e., probabilities of occurrence ranging from likely to very likely and severity of consequences ranging from significant to crisis). The risk assessment deliverable was intended to encourage the development of a robust program plan for salt disposition that was not overreliant on the success of the LCS program. However, the identified risks instead illustrate an approach that is heavily reliant on the success of LCS.

The programmatic risk assessment was performed almost a year ago, in March 2003, and events since then have created risks in the salt processing program not considered in DOE's report. Of particular interest to the Board, the programmatic risk assessment does not identify insufficient usable tank space as a risk to the salt disposition program, nor does it discuss mitigation strategies to reduce or treat tank farm liquid receipts. The risk assessment did conclude that insufficient funding represented a high risk with significant schedule impact and economic consequence, but the only mitigation strategy was to work to obtain funding, as opposed to a plan to minimize the impact of a perturbation in funding.

There is now less usable space in the SRS HLW system than at the time Recommendation 2001-1 was issued. Without an effective strategy for dealing with the aforementioned programmatic risks, the tank space situation will continue to degrade, which will in turn create safety concerns by increasing operational risk and jeopardizing vital cleanup activities at the site, including the retrieval and pretreatment of HLW sludges from old-style tanks, sludge vitrification at the Defense Waste Processing Facility, and stabilization of nuclear materials at H-Canyon and HB-Line.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests a briefing within 30 days of receipt of this letter addressing the following topics:

1. DOE's plan for management, processing, and stabilization of the HLW at SRS, given the LCS performance issues discussed above.

2. DOE's contingency plan for accomplishing HLW stabilization at SRS within the funding contained in the DOE budget request to Congress for fiscal year 2005.

Sincerely,

John T. Conway
Chairman

c: Mr. Jeffrey M. Allison
Mr. Mark B. Whitaker, Jr.